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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,396	07/27/2006	Naohisa Higashiyama	292586US40PCT	7177
22850	7590	09/22/2009	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			LEO, LEONARD R	
			ART UNIT	PAPER NUMBER
			3744	
			NOTIFICATION DATE	DELIVERY MODE
			09/22/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/587,396	Applicant(s) HIGASHIYAMA, NAOHISA	
	Examiner Leonard R. Leo	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/06, 10/07</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites “a refrigerant outlet header positioned in the rear of the inlet header.” However, as disclosed in Figure 3, the opposite with respect to the air flow direction X is depicted. Correction is required to provide consistency. Further, the recitation of “the inflow intermediate header and the outflow intermediate header being held in communication each at one end thereof” is indefinite. It is unclear whether the “one end” is referring to the end of the tubes or the end of the heat exchanger as a whole.

Regarding claim 2, the recitations of “a plurality of heat exchange tubes”, “a refrigerant inlet header” and “a refrigerant outlet header” have antecedent basis in claim 1. It is suggested “a” read -- the -- in each instance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1 and 25-26 as best understood is rejected under 35 U.S.C. 102(b) as being anticipated by Jang. Figure 1 of Jang discloses an inlet header 12a and a rearward outlet header 12d, and intermediate inflow and outflow headers 12b, 12c juxtaposed in a front-rear direction at one end of the heat exchanger.

Regarding claims 25-26, Jang (column 7, last paragraph) discloses the heat exchanger is an evaporator.

Claims 1-5, 7, 9, 11, 15-16, 18-21 and 25-26 as best understood are rejected under 35 U.S.C. 102(b) as being anticipated by Kawakubo et al. Figure 1 of Kawakubo et al discloses an inlet header 141a and a rearward outlet header 141e, and intermediate inflow and outflow headers 141b, 141d juxtaposed in a front-rear direction at one end of the heat exchanger.

Regarding claim 2, Figure 4 of Kawakubo et al discloses 2 rows of tubes 110.

Regarding claim 3, Figure 3 of Kawakubo et al discloses flow dividing control means 160 inside the outflow intermediate header 141b.

Regarding claims 4-5 and 7, Figures 1 and 3 of Kawakubo et al discloses flow dividing control means 160 with a plurality of equally spaced holes 161 dividing the outflow intermediate header 141b into first and second spaces.

Regarding claim 9, Figures 2-3 of Kawakubo et al discloses an inlet header 141a and a rearward outlet header 141e similar in structure to the intermediate inflow and outflow headers 141b, 141d, wherein separating means 151 would divide the intermediate header.

Regarding claim 11, Figures 2-3 of Kawakubo et al discloses an inlet header 141a and a rearward outlet header 141e similar in structure to the intermediate inflow and outflow headers

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141b, 141d, wherein a first member 172 for joining tubes 110 and a second member 150 are brazed and two closing members 180 (Figure 1) are attached to the ends thereof. It has been held that the term “integral” is sufficiently broad to embrace constructions united by such means as fastening and welding. *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973). In this instance, “brazing” would be read as providing an “integral” structure.

Regarding claims 15-16, Figures 2-3 of Kawakubo et al discloses second flow dividing control means 160 with a plurality of equally spaced holes 161 dividing the inlet header 141a into first and second spaces.

Regarding claims 18-19, Figures 2-3 of Kawakubo et al discloses third flow dividing control means 160 with a plurality of holes 161 dividing the outlet header 141e into first and second spaces.

Regarding claim 20, Figures 2-3 of Kawakubo et al discloses separating means 151.

Regarding claim 21, Figures 2-3 of Kawakubo et al discloses an inlet header 141a and a rearward outlet header 141e composed of a first member 172 for joining tubes 110 and a second member 150 are brazed and two closing members 180 (Figure 1) are attached to the ends thereof. It has been held that the term “integral” is sufficiently broad to embrace constructions united by such means as fastening and welding. *In re Hotte*, 177 USPQ 326, 328 (CCPA 1973). In this instance, “brazing” would be read as providing an “integral” structure.

Regarding claims 25-26, Kawakubo et al discloses the heat exchanger is an evaporator.

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang or Kawakubo et al.

Jang or Kawakubo et al discloses all the claimed limitations except holes having gradually increasing spacing in the flow diving control wall.

The gradually increasing hole spacing is considered to be an obvious variant of the equally spaced holes to achieve a uniform flow distribution.

Regarding claims 22-24, the specific tube and fin dimensions are considered to be obvious design expedients, producing no new and/or unexpected results and solving no stated problems. One of ordinary skill in the art would employ any tube and fin dimensions to achieve a desired heat transfer.

Allowable Subject Matter

Claims 8, 10, 12-14 and 17 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard R. Leo whose telephone number is (571) 272-4916. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on (571) 272-4834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ Leonard R. Leo /
PRIMARY EXAMINER
ART UNIT 3744

September 18, 2009